

IN THE CLAIMS

1. (currently amended) An information-processing apparatus that transmits a carrier wave signal having a prescribed frequency to a signal-responding member of a back-scattering communication scheme and that receives and processes a response signal obtained by modulating the carrier wave signal based on prescribed data from the signal-responding member, the apparatus comprising:

a signal-transmitting unit that transmits the carrier wave signal to the signal-responding member; and

a signal-processing unit that receives and processes the response signal scattered from the signal-responding member,

wherein the signal-processing unit is provided with a carrier-wave-compensating circuit, the carrier-wave-compensating circuit being adapted to obtain the response signal by:

comparing a phase of the carrier wave signal in transmitting the carrier wave signal with a phase of the carrier wave signal in receiving the carrier wave signal so as to detect any carrier wave signal that is not synchronized with the phase of the carrier wave signal in transmitting the carrier wave signal; and

eliminating therefrom the detected carrier wave signal from the any-carrier wave signal in receiving the carrier wave signal by subtracting therefrom a replica of the detected carrier wave signal that is not synchronized with the phase of the carrier wave signal in transmitting the carrier wave signal on the basis of a comparison result thereof.

2. (currently amended) The information-processing apparatus according to Claim 1, wherein the carrier-wave-compensating circuit includes:

a phase synchronization detection unit that compares ~~a~~the phase of the carrier wave signal in transmitting the carrier wave signal with ~~a~~the phase of the carrier wave signal in receiving the carrier wave signal and detects a phase of the detected carrier wave signal that is not synchronized with the phase of the carrier wave signal in transmitting the carrier wave signal; and

an amplitude-controlling unit that eliminates the detected carrier wave signal ~~therefrom~~ the carrier wave signal, ~~which is not synchronized with the phase of the carrier wave signal in transmitting-receiving the carrier wave signal, detected in the phase synchronization detection unit.~~

3. (currently amended) ~~The~~ An information-processing apparatus according to Claim 2, that transmits a carrier wave signal having a prescribed frequency to a signal-responding member of a back-scattering communication scheme and receives and processes a response signal obtained by modulating the carrier wave signal based on prescribed data from the signal-responding member, the apparatus comprising:

a signal-transmitting unit that transmits the carrier wave signal to the signal-responding member; and

a signal-processing unit that receives and processes the response signal scattered from the signal-responding member, wherein the signal-processing unit is provided with a carrier-wave-compensating circuit, the carrier-wave-compensating circuit comparing a phase of the carrier wave signal in transmitting the carrier wave signal with a phase of the carrier wave signal in

receiving the carrier wave signal and eliminating therefrom any carrier wave signal that is not synchronized with the phase of the carrier wave signal in transmitting the carrier wave signal on the basis of a comparison result thereof,

wherein the carrier-wave-compensating circuit includes:

a phase synchronization detection unit that compares a phase of the carrier wave signal in transmitting the carrier wave signal with a phase of the carrier wave signal in receiving the carrier wave signal and detects a carrier wave signal that is not synchronized with the phase of the carrier wave signal in transmitting the carrier wave signal; and

an amplitude-controlling unit that eliminates therefrom the carrier wave signal, which is not synchronized with the phase of the carrier wave signal in transmitting the carrier wave signal, detected in the phase synchronization detection unit,

wherein the amplitude-controlling unit includes:

an amplitude-adjusting circuit that adjusts amplitude of the carrier wave signal, which is not synchronized with the phase of the carrier wave signal in transmitting the carrier wave signal, detected in the phase synchronization detection unit; and

a calculation circuit that subtracts the carrier wave signal adjusted in its amplitude by the amplitude-adjusting circuit from the carrier wave signal in receiving the carrier wave signal.

4. (currently amended) A wireless communication system that performs a wireless communication of prescribed data with a back-scattering communication scheme, the system comprising:

a signal-responding member that receives a carrier wave signal having a prescribed frequency and transmits a response signal obtained by modulating the carrier wave signal based on the prescribed data; and

an information-processing apparatus having a wireless transmission and reception function, the information-processing apparatus transmitting the carrier wave signal to the signal-responding member and receiving and information-processing the response signal scattered from the signal-responding member,

wherein the information-processing apparatus includes a carrier-wave-compensating circuit that obtains the response signal by:

~~compares~~ comparing a phase of the carrier wave signal in transmitting the carrier wave signal with a phase of the carrier wave signal in receiving the carrier wave signal so as to detect any carrier wave signal that is not synchronized with the phase of the carrier wave signal in transmitting the carrier wave signal; and

~~eliminates~~ eliminating the detected carrier wave signal therefrom any the carrier wave signal that is not synchronized with the phase of the carrier wave signal in transmitting receiving the carrier wave signal by subtracting therefrom a replica of the detected carrier wave signal on the basis of a comparison result thereof.

5. (currently amended) The wireless communication system according to Claim 4, wherein the carrier-wave-compensating circuit includes:

a phase synchronization detection unit that compares ~~a the~~ phase of the carrier wave signal in transmitting the carrier wave signal with ~~a the~~ phase of the carrier wave signal in

receiving the carrier wave signal and detects ~~a the phase of the detected carrier wave signal that is not synchronized with the phase of the carrier wave signal in transmitting the carrier wave signal~~; and

an amplitude-controlling unit that eliminates ~~therefrom the detected carrier wave signal, which is not synchronized with the phase of the carrier wave signal in transmitting receiving the carrier wave signal, detected in the phase synchronization detection unit.~~

6. (currently amended) ~~The~~ A wireless communication system according to Claim 5, ~~that performs a wireless communication of prescribed data with a back-scattering communication scheme, the system comprising:~~

a signal-responding member that receives a carrier wave signal having a prescribed frequency and transmits a response signal obtained by modulating the carrier wave signal based on the prescribed data; and

an information-processing apparatus having a wireless transmission and reception function, the information-processing apparatus transmitting the carrier wave signal to the signal-responding member and receiving and information-processing the response signal scattered from the signal-responding member,

wherein the information-processing apparatus includes a carrier-wave-compensating circuit that compares a phase of the carrier wave signal in transmitting the carrier wave signal with a phase of the carrier wave signal in receiving the carrier wave signal and eliminates therefrom any carrier wave signal that is not synchronized with the phase of the carrier wave signal in transmitting the carrier wave signal on the basis of a comparison result thereof,

wherein the carrier-wave-compensating circuit includes:

a phase synchronization detection unit that compares a phase of the carrier wave signal in transmitting the carrier wave signal with a phase of the carrier wave signal in receiving the carrier wave signal and detects a carrier wave signal that is not synchronized with the phase of the carrier wave signal in transmitting the carrier wave signal; and

an amplitude-controlling unit that eliminates therefrom the carrier wave signal, which is not synchronized with the phase of the carrier wave signal in transmitting the carrier wave signal, detected in the phase synchronization detection unit,

wherein the amplitude-controlling unit includes:

an amplitude-adjusting circuit that adjusts amplitude of the replica of the detected carrier wave signal; and

a calculation circuit that subtracts the replica of the detected carrier wave signal, adjusted in its amplitude by the amplitude-adjusting circuit, from the carrier wave signal in receiving the carrier wave signal.

7. (original) The wireless communication system according to Claim 4, wherein the signal-responding member is used with it being attached to a prescribed object to be specified.

8. (currently amended) The wireless communication system according to Claim 4, wherein the signal-responding member comprises:

an antenna body that receives the carrier wave signal;

a memory unit that stores the prescribed data;

an amplitude modulation unit that performs amplitude modulation on the carrier wave signal based on the prescribed data read out of the memory unit; and

a power-supplying unit that supplies induced power to the memory unit and the amplitude modulation unit, the induced power being induced based on the carrier wave signal received by the antenna body.

9. (currently amended) A wireless communication method of a back-scattering communication scheme comprising the steps of:

attaching to an object to be specified a signal-responding member that receives a carrier wave signal having a prescribed frequency and that transmits a response signal obtained by modulating the carrier wave signal based on the prescribed data;

transmitting the carrier wave signal to the signal-responding member attached to the object; and

receiving a reflected carrier wave signal;  
obtaining and signal-processing the response signal returned from the signal-responding member,

wherein the response signal is obtained by:

comparing a phase of the carrier wave signal in transmitting the carrier wave signal with a phase of the carrier wave signal in receiving the carrier wave signal so as to detect any carrier wave that is not synchronized with the phase of the carrier wave signal in transmitting the carrier wave signal ~~are compared and~~

eliminating a the detected carrier wave signal that is not synchronized with the phase of from the carrier wave signal in transmitting receiving the carrier wave signal by subtracting therefrom a replica of the detected carrier

~~wave signal is eliminated on the basis of a comparison result thereof.~~

10. (currently amended) The wireless communication method according to Claim 9, wherein:

comparing a phase of the carrier wave signal in transmitting the carrier wave signal with a phase of the carrier wave signal in receiving the carrier wave signal  
~~are compared~~comprises: detecting a phase of the detected,  
~~a carrier wave signal that is not synchronized with the phase of the carrier wave signal in transmitting the carrier wave signal; and~~

eliminating the detected carrier wave signal responsive to detecting the phase of the detected carrier wave signal,  
~~which is not synchronized with the phase of the carrier wave signal in transmitting the carrier wave signal is eliminated therefrom.~~

11. (currently amended) ~~The~~ A wireless communication method ~~according to Claim 10, of a back-scattering communication scheme comprising the steps of:~~

attaching to an object to be specified a signal-responding member that receives a carrier wave signal having a prescribed frequency and transmits a response signal obtained by modulating the carrier wave signal based on the prescribed data;

transmitting the carrier wave signal to the signal-responding member attached to the object; and

receiving and signal-processing the response signal return from the signal-responding member,

wherein a phase of the carrier wave signal in transmitting the carrier wave signal with a phase of the carrier wave signal in receiving the carrier wave signal are compared and a carrier



wave signal that is not synchronized with the phase of the carrier wave signal in transmitting the carrier wave signal is eliminated on the basis of a comparison result thereof,

wherein a phase of the carrier wave signal in transmitting the carrier wave signal with a phase of the carrier wave signal in receiving the carrier wave signal are compared; a carrier wave signal that is not synchronized with the phase of the carrier wave signal in transmitting the carrier wave signal; and the detected carrier wave signal, which is not synchronized with the phase of the carrier wave signal in transmitting the carrier wave signal is eliminated therefrom,

wherein amplitude of the carrier wave signal, which is not synchronized with the phase of the carrier wave signal in transmitting the carrier wave signal is adjusted; and the carrier wave signal thus adjusted in its amplitude is subtracted from the carrier wave signal in receiving the carrier wave signal.

12. (new) The information-processing apparatus according to Claim 2, wherein the amplitude-controlling unit includes:

an amplitude-adjusting circuit that adjusts amplitude of the replica of the detected carrier wave signal; and

a calculation circuit that subtracts the replica of the detected carrier wave signal, adjusted in its amplitude by the amplitude-adjusting circuit, from the carrier wave signal in receiving the carrier wave signal.

13. (new) The wireless communication system according to Claim 5, wherein the amplitude-controlling unit includes:

an amplitude-adjusting circuit that adjusts amplitude of the replica of the detected carrier wave signal; and

a calculation circuit that subtracts the replica of the detected carrier wave signal, adjusted in its amplitude by the amplitude-adjusting circuit, from the carrier wave signal in receiving the carrier wave signal.

14. (new) The wireless communication method according to Claim 10, wherein eliminating the detected carrier wave signal further comprises:

adjusting amplitude of the replica of the detected carrier wave signal; and

subtracting the replica of the detected carrier wave signal thus adjusted in its amplitude from the carrier wave signal in receiving the carrier wave signal.